

Case 3532***Murex tubercularis* Montagu, 1803 (currently *Cerithiopsis tubercularis*; Mollusca, Gastropoda, CERITHIOPSIDAE): proposed conservation of usage of the specific name by designation of a neotype**

Alberto Cecalupo

Via Grancino 6y, 20090 Buccinasco, Italy

Elio Robba

Dipartimento di Scienze Geologiche e Geotecnologie, Università degli Studi di Milano Bicocca, Piazza della Scienza 4, 20126 Milano, Italy

(e-mail: elio.robba@unimib.it)

Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve the current usage of the name *Cerithiopsis tubercularis* (Montagu, 1803) for a species of cerithiopsine gastropod from the southern coast of Great Britain. The lectotype of *Cerithiopsis tubercularis* (Montagu, 1803) is not in taxonomic accord with the current usage of this name and the confusing description ignoring the part bearing the most obvious diagnostic characters led to considerable confusion. It is proposed that the previous type fixations for the species *Cerithiopsis tubercularis* (Montagu, 1803) be set aside and a neotype consistent with the current usage be designated.

Keywords. Nomenclature; taxonomy; CERITHIOPSIDAE; *Cerithiopsis*; *Cerithiopsis tubercularis*; cerithiopsine gastropod; Recent; Atlantic; Mediterranean.

1. *Murex tubercularis* was established by Montagu (1803, p. 270) on the basis of Recent British specimens found at 'the mouth of the Ann in Devonshire' and 'on the coast of Sandwich'. In Montagu's text there is no information about the number of specimens dealt with. The brief original description 'M. with nine or ten, slender, taper, tuberculated volutions, separated only by a slight depression: colour chestnut-brown: apex pointed; aperture small, oval, ending in a canal, somewhat enclosed by the columella turning inward. Length a quarter of an inch', and the absence of any illustration failed to clarify the distinguishing characters of the species. Forbes & Hanley (1851), introducing the new genus *Cerithiopsis* for Montagu's species (p. 364), were the first to delineate (p. 365) the main characters of *Cerithiopsis tubercularis*, which was reported to have a uniform dark or chocolate-brown colour, three to four smooth and semitransparent apical whorls, 3 spiral rows of beads on the spire whorls, and 2–3 basal spirals. The interpretation of most subsequent workers has followed the species concept outlined by Forbes & Hanley (1851). Only some sculptural details of the protoconch, i.e. subsutural and suprasutural granular microprotuberances, were discovered more recently with the advent of scanning electron microscopy.

2. While there is general agreement about the teleoconch characters of *C. tubercularis*, remarkable discrepancies exist concerning the sculpture of the larval shell of the species (cf. Jeffreys, 1885; Glibert, 1973; Richter & Thorson, 1975; Grecchi, 1984; Giribet & Peñas, 1997; Giannuzzi-Savelli et al., 1999; Landau et al., 2006; Chirli, 2009; Prkić & Mariottini, 2009). Marshall (1978), aiming to correctly interpret *Cerithiopsis tubercularis*, examined a syntype from the Montagu Collection in the City Museum, Exeter (EXEMS) and designated it as lectotype of *C. tubercularis*. Marshall (p. 83) provided a detailed description of the protoconch of the lectotype 'Protoconch of planktotrophic larval type, clearly demarcated from teleoconch whorls. Last half-whorl with a sharp peripheral carina and evenly spaced brephic riblets on shoulder. First 1^{1/2} (embryonic) whorls minutely granulate throughout. Subsequent whorls traversed over abapical two-thirds by fine, crisp, evenly spaced prosocline riblets; each riblet with about 5 evenly spaced triangles extending in the direction of coiling for about width of rib from apertural side. Sinusigera sinus deep, opisthocyrt-opisthocline.' Marshall (1978, fig. 13C) figured the entire shell of the lectotype of *C. tubercularis* without any SEM image of its protoconch.

3. Montagu's original material in EXEMS consists of one box with two specimens glued to a small piece of paper attached to the original manuscript label; these specimens are collectively numbered 4235. The first syntype (Fig. 1A) lacks the protoconch. Its teleoconch of about 10 whorls conforms to the concept of *Cerithiopsis tubercularis* followed for nearly two centuries by most authors and is not in disagreement with the short description published by Montagu; there are no upper basal spirals and the color is reddish-brown. The second syntype retains only the last protoconch whorl (Fig. 1C) sculptured with sparse granules and unevenly spaced, broken prosocline riblets on the abapical three-quarters, with remnants of minute granules occurring subsuturally. The teleoconch (Fig. 1B) of about 8 whorls is closely similar to that of the first syntype; the color is whitish. This specimen was designated as the lectotype of *C. tubercularis* by Marshall (1978) as indicated by a label of National Museum, Wellington, N.Z., now in EXEMS (Fig. 1D). The illustration of the lectotype published by Marshall (1978, fig. 13C) shows a shell with a complete protoconch; thus, it must be inferred that the protoconch was broken after Marshall's examination of the specimen. The sculpture observed on the preserved whorl (the last) of the protoconch scarcely agrees with the description of the larval shell of the lectotype provided by Marshall, whereas it matches that reported by Marshall (1978, p. 84) for his new species *Cerithiopsis powelli* (Fig. 1G). The description of the larval shell of the lectotype of *Cerithiopsis tubercularis* published by Marshall (1978) agrees with that of the lectotype of *Cerithiopsis barleei* Jeffreys, 1867 (Fig. 1I) in the Smithsonian Institution, National Museum of Natural History, Washington (USNM), selected from lot USNM 62164 by Cecalupo & Robba (2010). This suggests that the type series of *C. tubercularis* is probably mixed and that the lectotype designated by Marshall could in fact be *C. barleei*. However, the sculpture on the last protoconch whorl (the preserved one) of the lectotype of *C. tubercularis* in EXEMS is more similar to that of New Zealand *Cerithiopsis powelli* as described and figured by Marshall (1978) than to that of the Atlantic and Mediterranean *C. barleei*. Because of this discrepancy, it is unclear which specimen Marshall actually examined, and the taxonomic identity of *C. tubercularis* cannot be reliably identified from the lectotype (the whitish syntype).

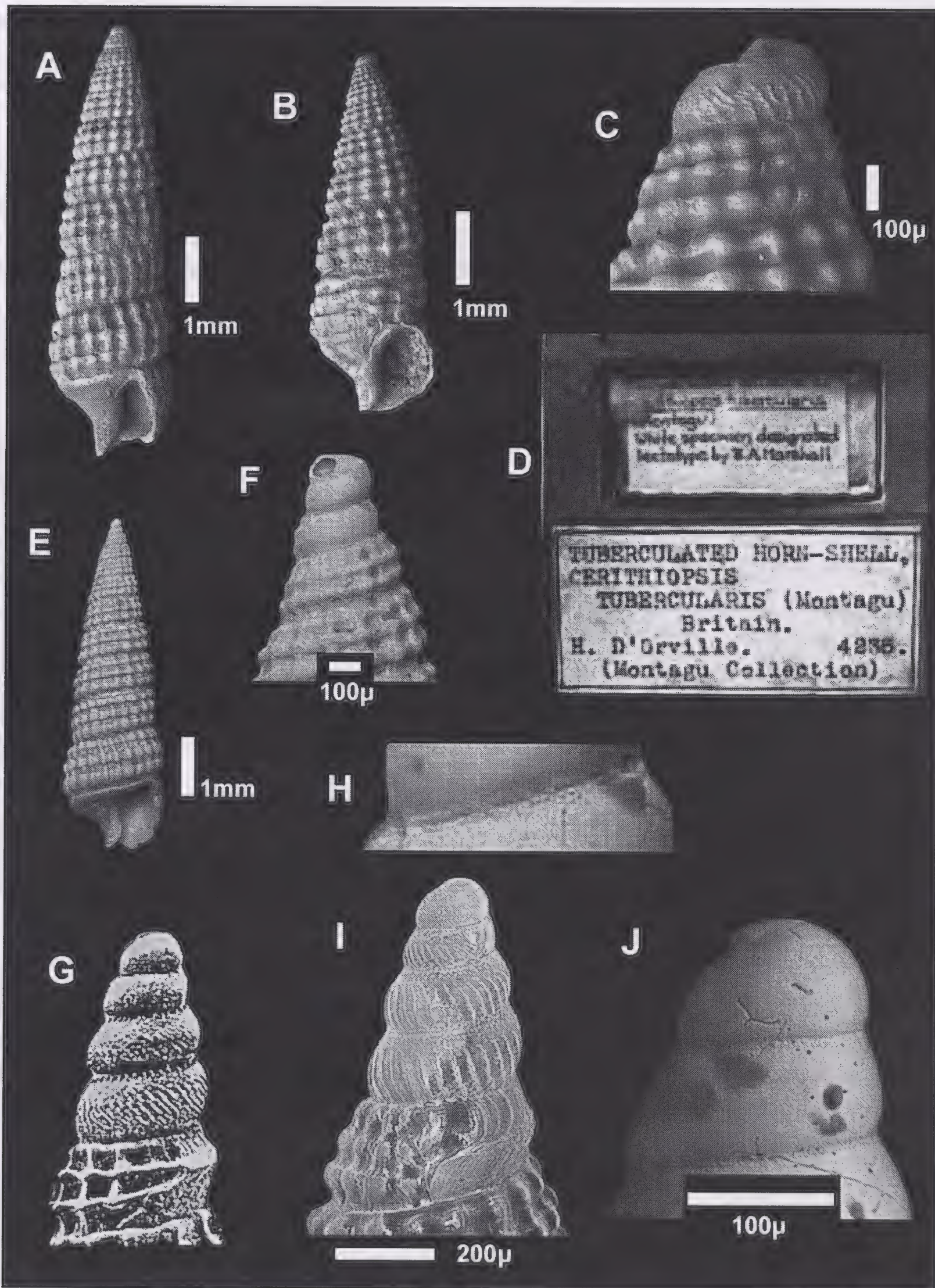


Fig. 1. A–C. Syntypes of *Murex tubercularis* Montagu, 1803, Montagu collection, EXEMS 4235 (2 specimens), mouth of the Ann in Devonshire and coast of Sandwich, Recent: A. Reddish-brown syntype (protoconch missing) conforming to the current concept of *Cerithiopsis tubercularis* (Montagu, 1803); B. Whitish syntype designated lectotype of *Cerithiopsis tubercularis* (Montagu, 1803) by Marshall (1978); C. Same, detail of last protoconch whorl. D. EXEMS labels. The upper label reads 'National Museum, Wellington, N.Z. *Cerithiopsis tubercularis* (Montagu). White specimen designated lectotype by B.A. Marshall'. The lower label reads 'Tuberculated Horn-Shell. *Cerithiopsis tubercularis* (Montagu). Britain. H. D'Orville. 4235. (Montagu Collection)'. E, F, H. Possible syntype of *Murex tubercularis* Montagu, 1803, Montagu's types, BMNH 20090384, British coast, Recent, proposed herein as neotype of *Murex tubercularis* Montagu, 1803: E. Apertural view; F. Preserved apical whorls; H. detail of F showing remnants of subsutural and suprasutural granular microprotuberances. G. Protoconch of *Cerithiopsis powelli* Marshall, 1978 (reproduced from Fig. 13B of Marshall) diameter 0.4 mm. I. Protoconch of the lectotype of *Cerithiopsis barleei* Jeffreys, 1867. J. *Cerithiopsis tubercularis* (Montagu, 1803) of prevailing usage, Tasuçu, Turkey, 7 m depth; detail of the protoconch showing remnants of granular microprotuberances (illustrated for comparison).

4. The lectotype does not conform to the prevailing usage of *C. tubercularis* (Sowerby, 1855, 1859; Jeffreys, 1867, 1869; Bucquoy, Dautzenberg & Dollfus, 1884; Watson, 1886; Locard, 1892; 1903; Kobelt, 1908; Lebour, 1933; Thiriot-Quévieux, 1969; Fretter & Pilkington, 1970; Parenzan, 1970; Hubendick & Warén, 1972; Thiriot-Quévieux & Rodriguez Babio, 1975; Nordsiek, 1976; Fretter & Graham, 1982; van Aartsen et al., 1984; Graham, 1988; Cachia et al., 1996; Palazzi & Villari, 2001; Coppini, 2008; Cecalupo & Robba, 2010). In fact, the protoconch of *C. tubercularis*, as described and/or illustrated by the cited authors, differs markedly in having convex whorls throughout, being devoid of axial sculpture and bearing only suprasutural and subsutural granular microprotuberances.

5. Amelia MacLellan found a possible syntype (BMNH 20090384) of *Cerithiopsis tubercularis* in the Natural History Museum, London. She (pers. comm., 2009) informed us that 'it is considered so as the labelling on the specimen is the same as other material thought to be Montagu's types'. The locality of this possible syntype is 'British Coast'. The specimen is nicely preserved and retains the last 2 whorls of the larval shell. The protoconch whorls are convex, showing remnants of subsutural and suprasutural granular microprotuberances; there is no trace of either axial sculpture or carination of the last half-whorl (Fig. 1F, H). These characters fully agree with the SEM images and the descriptions of the protoconch of *C. tubercularis* published by some recent workers (Thiriot-Quévieux & Rodriguez Babio, 1975; Nordsiek, 1976; Fretter & Graham, 1982). The teleoconch (Fig. 1E) conforms in shape and sculpture to the current concept of *C. tubercularis*; the colour is slightly pale reddish-brown.

6. From the above, it appears that (1) the two types of *Cerithiopsis tubercularis* in EXEMS belong to two different species, (2) the identity of the lectotype is doubtful, and (3) the lectotype is not in taxonomic accord with the prevailing usage of the name. We conclude that the existing name-bearing type of *C. tubercularis* should be set aside and a neotype designated in order to maintain stability (Article 75.6 of the Code). The reddish-brown syntype in EXEMS is most probably *C. tubercularis*, but it is not suitable for a neotype as it lacks the protoconch (Recommendation 75A of the Code). We think it wiser to select the better preserved possible syntype (BMNH 20090384) as neotype of *Cerithiopsis tubercularis*.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the species *Murex tubercularis* Montagu, 1803 and to designate as neotype the possible syntype BMNH 20090384 at the Natural History Museum, London;
- (2) to place on the Official List of Specific Names in Zoology the name *tubercularis* Montagu, 1803, as published in the binomen *Murex tubercularis* and as defined by the neotype designated in (1) above.

References

- Bucquoy, E., Dautzenberg, P. & Dollfus, G. 1882–1886. *Les Mollusques Marins du Roussillon. Tome I. Gastropodes*. Pp. 1–84 (1882); pp. 85–196 (1883); pp. 197–342 (1884); pp. 343–418 (1885); pp. 419–570 (1886) J.-B. Baillière & Fils, Paris.
- Cachia, C., Mifsud, C. & Sammut, P.M. 1996. *The marine Mollusca of the Maltese Islands (Part Two: Neotaenioglossa)*. 228 pp. Backhuys Publishers, Leiden.

- Cecalupo, A. & Robba, E. 2010. The identity of *Murex tubercularis* Montagu, 1803 and description of one new genus and two new species of the Cerithiopsidae (Gastropoda: Triphoroidea). *Bollettino Malacologico*, **46**: 45–64.
- Chirli, C. 2009. *Malacofauna pliocenica Toscana*, vol. 7. 98 pp. Published by the author, Tavarnelle.
- Coppini, M. 2008. *La famiglia Cerithiopsidae H. & A. Adams, 1853*. 26 pp. (unnumbered) Documenti del Gruppo Malacologico Livornese, online report.
- Forbes, E. & Hanley, S. 1848–1853. *A history of British Mollusca and their shells*. Vol. 1, pp. 1–477 (1848); vol. 2, pp. 1–480 (1849); vol. 3, pp. 1–320 (1850), pp. 321–616 (1851); vol. 4, pp. 1–301 (1852–1853) John Van Voorst, London.
- Fretter, V. & Graham, A. 1982. The Prosobranch Molluscs of Britain and Denmark. Part 7 – ‘Heterogastropoda’ (Cerithiopsacea, Triforacea, Epitoniacea, Eulimacea). *The Journal of Molluscan Studies, Supplement*, **11**: 363–434.
- Fretter, V. & Pilkington, C. 1970. Prosobranchia veliger larvae of Taenioglossa and Stenoglossa. *Conseil International pour l'Exploration de la Mer. Zooplankton*, sheets 129–132 (pp. 1–26).
- Giannuzzi-Savelli, R., Pusateri, F., Palmeri, A. & Ebreo, C. 1999. *Atlante delle conchiglie del Mediterraneo. Vol. 3 (Caenogastropoda parte 2: Ptenoglossa)*. 127 pp. Edizioni Evolver s.r.l., Roma.
- Giribet, X. & Peñas, Y. 1997. Malacological marine fauna from Garraf coast (NE Iberian Peninsula). *Iberus*, **15**: 41–93.
- Glibert, M. 1973. Révision des Gastropoda du Danien et du Montien de la Belgique. I. Les Gastropoda du Calcaire de Mons. *Mémoires de l'Institut Royal des Sciences Naturelles de Belgique*, **173**: 1–116.
- Grecchi, G. 1984. Molluschi planctonici e bentonici in sedimenti sapropelitici del Quaternario della Dorsale Mediterranea. *Bollettino Malacologico*, **20**: 1–34.
- Hubendick, B. & Waren, A. 1972. Småsnäckor från Svenska västkusten. 4. Släkterna *Laeocochlis*, *Triphora*, *Cerithiella*, *Aclis*, *Trophon* m.fl. *Göteborgs Naturhistoriska Museum*, **1972**: 45–50.
- Jeffreys, J.G. 1867. *British Conchology, or an account of the Mollusca which now inhabit the British Isles and the surrounding seas*, vol. IV. 486 pp. John Van Voorst, London.
- Jeffreys, J.G. 1869. *British Conchology, or an account of the Mollusca which now inhabit the British Isles and the surrounding seas*, vol. 5. 258 pp. John Van Voorst, London.
- Jeffreys, J.G. 1885. On the Mollusca procured during the ‘Lightning’ and ‘Porcupine’ Expeditions, 1868–70. Part 9. *Proceedings of the Zoological Society of London*, **1885**: 27–63.
- Kobelt, W. 1908. *Iconographie der schalentragenden europäischen Meeresconchylien. Vierter Band*. 172 pp. C.W. Kreidel's Verlag, Wiesbaden.
- Landau, B., La Perna, R. & Marquet, R. 2006. The Early Pliocene Gastropoda (Mollusca) of Estepona, Southern Spain. Part 6: Triphoroidea, Epitonioidae, Eulimoidea. *Palaeontos*, **10**: 1–96.
- Lebour, M.V. 1933. The life-histories of *Cerithiopsis tubercularis* (Montagu), *C. barleei* Jeffreys and *Triphora perversa* (L.). *Journal of the Marine Biological Association of the United Kingdom. (N.S.)*, **18**: 491–498.
- Locard, A. 1892. *Les coquilles marines des côtes de France*. 384 pp. J.-B. Baillière & Fils, Paris.
- Locard, A. 1903. Les *Cerithium* et les Cerithiidae des mers d'Europe. *Annales de la Société d'Agriculture, Sciences et Industrie de Lyon*, **10** (1902): 95–128.
- Marshall, B.A. 1978. Cerithiopsidae (Mollusca: Gastropoda) of New Zealand, and provisional classification of the family. *New Zealand Journal of Zoology*, **5**: 47–120.
- Montagu, G. 1803. *Testacea Britannica or Natural History of British Shells, Marine, Land, and Fresh-Water*. xxxvii, 606 pp. J.S. Hollis, London.
- Nordsiek, F. 1976. Il Genere *Cerithiopsis* Forbes & Hanley, 1849 nei mari d'Europa. *La Conchiglia*, **85–86**: 6–7 & 18.
- Palazzi, S. & Villari, A. 2001. Molluschi e brachiopodi delle grotte sottomarine del Taorminese. *La Conchiglia, Suppl.*, **297**: 1–56.

- Parenzan, P.** 1970. *Carta d'identità delle conchiglie del Mediterraneo. Vol. 1 Gasteropodi*. 283 pp. Ed. Bios Taras, Taranto.
- Prkić, J. & Mariottini, P.** 2009. Description of two new *Cerithiopsis* from the Croatian coast, with comments on the *Cerithiopsis tubercularis* complex (Gastropoda: Cerithiopsidae). *Aldrovandia*, **5**: 3–27.
- Richter, G. & Thorson, G.** 1975. Pelagische Prosobranchienlarven des Golfes von Neapel. *Ophelia*, **13**: 109–185.
- Sowerby, G.B.** 1855. *Monographs of genera of shells. Vol. II*. 460 pp. G.B. Sowerby, London.
- Sowerby, G.B.** 1859. *Illustrated index of British shells containing figures of all the Recent species*. I–XV pp. Simpkin, Marshall & Co., London.
- Thiriot-Quiévreux, C.** 1969. Caractéristiques morphologiques des véligères planctoniques de gastéropodes de la région de Banyuls-sur-Mer. *Vie et Milieu, Série B: Océanographie*, **20**: 333–366.
- Thiriot-Quiévreux, C. & Rodriguez Babio, C.** 1975. Étude des protoconques de quelques prosobranches de la région de Roscoff. *Cahiers de Biologie Marine*, **16**: 135–148.
- Watson, R.B.** 1886. On the Cerithiopsides from the Eastern Side of the North Atlantic, with three new Species from Madeira. *The Journal of the Linnean Society. Zoology*, **19**: 89–95.

Acknowledgement of receipt of this application was published in BZN **67**: 198.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).